



# TAOGLAS®



# Datasheet

**Part No:**  
**MA342.A.BI.001**

**Description**

2-in-1 Black Magnetic Mount 4G/LTE MIMO  
With 2m of RG-174 and SMA(M) Connectors

**Features:**

Compact, Magnetic Mount Antenna  
2x LTE MIMO  
Covers All Global Cellular Bands from 600-6000MHz  
Dims: 58mm \* 58mm \* 65mm  
Cable: 2m of RG174  
Connector: SMA(M)  
RoHS & Reach Compliant

|           |                                |           |
|-----------|--------------------------------|-----------|
| <b>1.</b> | <b>Introduction</b>            | <b>3</b>  |
| <b>2.</b> | <b>Specification</b>           | <b>4</b>  |
| <b>3.</b> | <b>Mechanical Drawing</b>      | <b>5</b>  |
| <b>4.</b> | <b>Packaging</b>               | <b>6</b>  |
| <b>5.</b> | <b>Antenna Characteristics</b> | <b>7</b>  |
| <b>6.</b> | <b>Radiation Patterns</b>      | <b>11</b> |
| <hr/>     |                                |           |
|           | Changelog                      | 38        |

Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.



# 1. Introduction



The Taoglas MA342 magnetic mount antenna has been designed for high performance 2-in-1 combination antenna with 5G/4G MIMO. The robust, compact housing is just at only 65mm tall and 58mm in diameter, it is an ideal for external antenna for assets requiring Cellular and Wi-Fi connectivity.

The 5G/4G antenna, covers all worldwide LTE bands, includes many sub 6GHz, 5G FR1 bands and includes fallback to 3G/2G bands where required.

The IP67 rated enclosure is made from a durable, UV resistant ASA material that makes it resistant to vandalism or impact. An integrated rubber O-ring under the enclosure prevents water ingress under the antenna. It is mounted from the inside of the user device enclosure and the small thread allows for installation in situations where space is minimal.

Typical applications include:

- Smart Metering and Remote Monitoring
- Digital Signage
- Transportation and Telematics

Cable type and length, and connectors are fully customizable, and the MA342 can also be customized for other configurations. It is also available in white (MA342.W.LBI.001). Contact your regional Taoglas customer support team for more information.

## 2. Specification

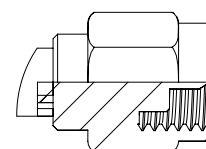
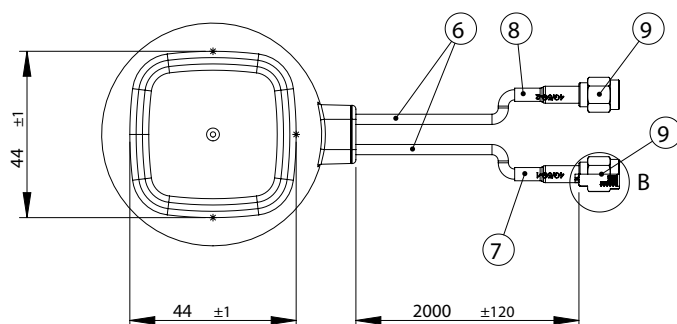
| LTE Electrical                                          |                 |             |                |                   |                 |           |              |                   |                  |
|---------------------------------------------------------|-----------------|-------------|----------------|-------------------|-----------------|-----------|--------------|-------------------|------------------|
| Band                                                    | Frequency (MHz) | Measurement | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern | Max. input power |
| <b>5GNR/4G</b><br>Band71                                | 617-698         | LTE1        | 28.1           | -5.51             | -0.78           | 50 Ω      | Linear       | Omni              | 2W               |
|                                                         |                 | LTE2        | 24.7           | -6.07             | -0.91           |           |              |                   |                  |
| <b>4G/3G</b><br>Band<br>12,13,14,17,28,29               | 698-824         | LTE1        | 44.7           | -3.50             | 0.99            |           |              |                   |                  |
|                                                         |                 | LTE2        | 43.3           | -3.63             | 1.12            |           |              |                   |                  |
| <b>4G/3G/NB-IoT/Cat M</b><br>Band<br>5,8,18,19,20,26,27 | 824-960         | LTE1        | 46.7           | -3.31             | 0.99            |           |              |                   |                  |
|                                                         |                 | LTE2        | 57.4           | -2.41             | 1.55            |           |              |                   |                  |
| <b>5GNR/4G</b><br>Band 21,32,74,75,76                   | 1427-1518       | LTE1        | 33.2           | -4.79             | 2.87            |           |              |                   |                  |
|                                                         |                 | LTE2        | 30.6           | -5.15             | 2.68            |           |              |                   |                  |
| <b>4G/3G</b><br>Band<br>1,2,3,4,9,23,25,35,39,66        | 1710-2200       | LTE1        | 65.3           | -1.85             | 5.93            |           |              |                   |                  |
|                                                         |                 | LTE2        | 63.5           | -1.97             | 5.34            |           |              |                   |                  |
| <b>4G/3G</b><br>Band 7,30,38,40,41                      | 2300-2690       | LTE1        | 69.0           | -1.61             | 5.64            |           |              |                   |                  |
|                                                         |                 | LTE2        | 70.9           | -1.50             | 5.95            |           |              |                   |                  |
| <b>5GNR/4G</b><br>Band<br>22,42,48,77,78,79             | 3300-5000       | LTE1        | 55.7           | -2.54             | 6.84            |           |              |                   |                  |
|                                                         |                 | LTE2        | 61.6           | -2.10             | 6.70            |           |              |                   |                  |
| <b>LTE5200/Wi-Fi5800</b>                                | 5150-5925       | LTE1        | 57.3           | -2.42             | 6.00            |           |              |                   |                  |
|                                                         |                 | LTE2        | 56.4           | -2.48             | 5.97            |           |              |                   |                  |

| Mechanical |                |
|------------|----------------|
| Dimensions | 58 x 58 x 65mm |
| Material   | ASA            |
| Connector  | SMA(M)         |
| Cable      | 2m of RG174    |

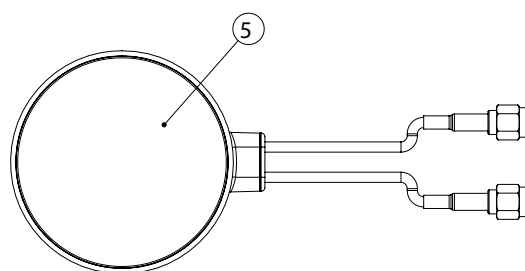
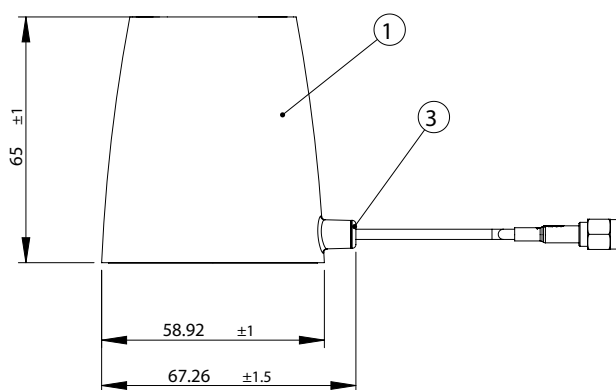
| Environmental          |             |
|------------------------|-------------|
| Temperature Range      | -40 - +85°C |
| RoHs & REACH Compliant | Yes         |



### 3. Mechanical Drawing



DETAIL B  
SCALE 2 : 1



|   | Name                            | Material        | Finish              | Qty |
|---|---------------------------------|-----------------|---------------------|-----|
| 1 | Top housing                     | ASA             | Black               | 1   |
| 2 | Bottom housing                  | ASA             | Black               | 1   |
| 3 | Grommet                         | Silicone Rubber | Black               | 1   |
| 4 | Magnet pack/N48                 | NdFeB           | Ni Plated           | 1   |
| 5 | Matte Silver Label              | PET             | Matte Silver        | 1   |
| 6 | RG174 Coaxial Cable             | PVC             | Black               | 2   |
| 7 | Heat Shrink Tube(4G/5G-1)       | PE              | Red Tube/White Text | 1   |
| 8 | Heat Shrink Tube(4G/5G-2)       | PE              | Red Tube/White Text | 1   |
| 9 | SMA(M)ST Plug for RG-316/RG-174 | Brass           | Au Plated           | 2   |

## 4. Packaging

1 PCS / PE Bag  
Weight: 161g



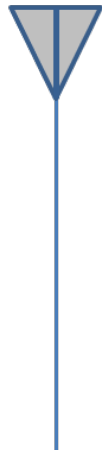
60 PCS / Carton  
Dimensions: 430 x 380 x 280mm  
Weight: 10.76Kg



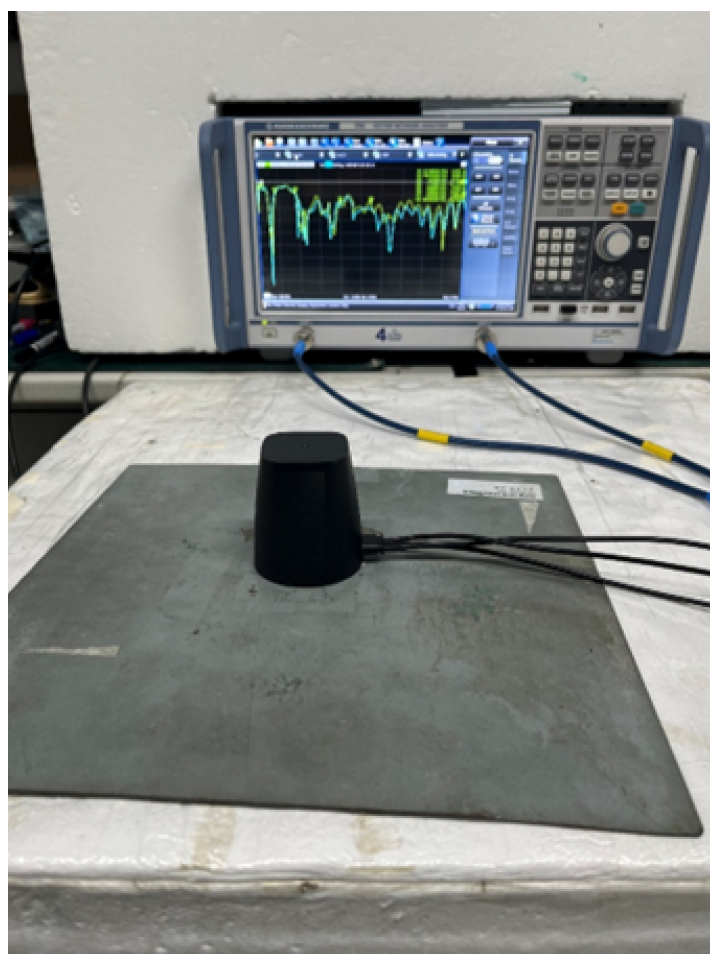
## 5. Antenna Characteristics

### 5.1 Test Setup

AUT

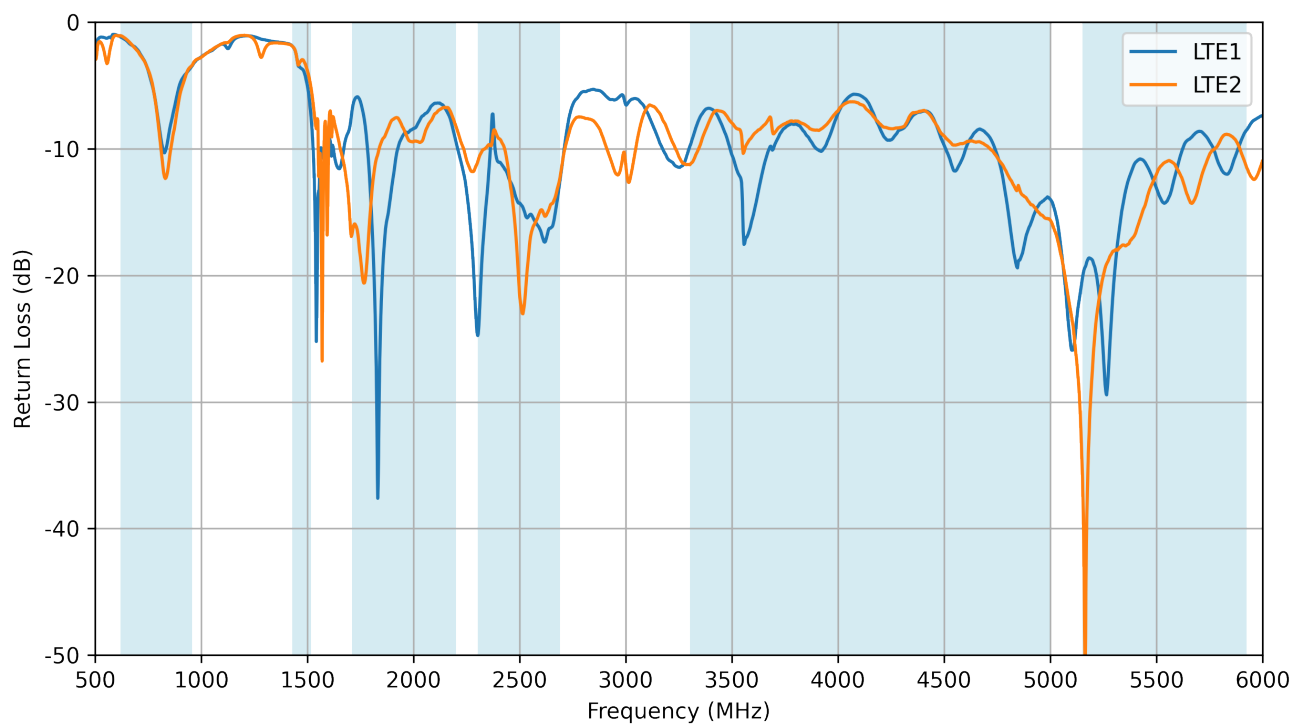


Vector Network Analyzer

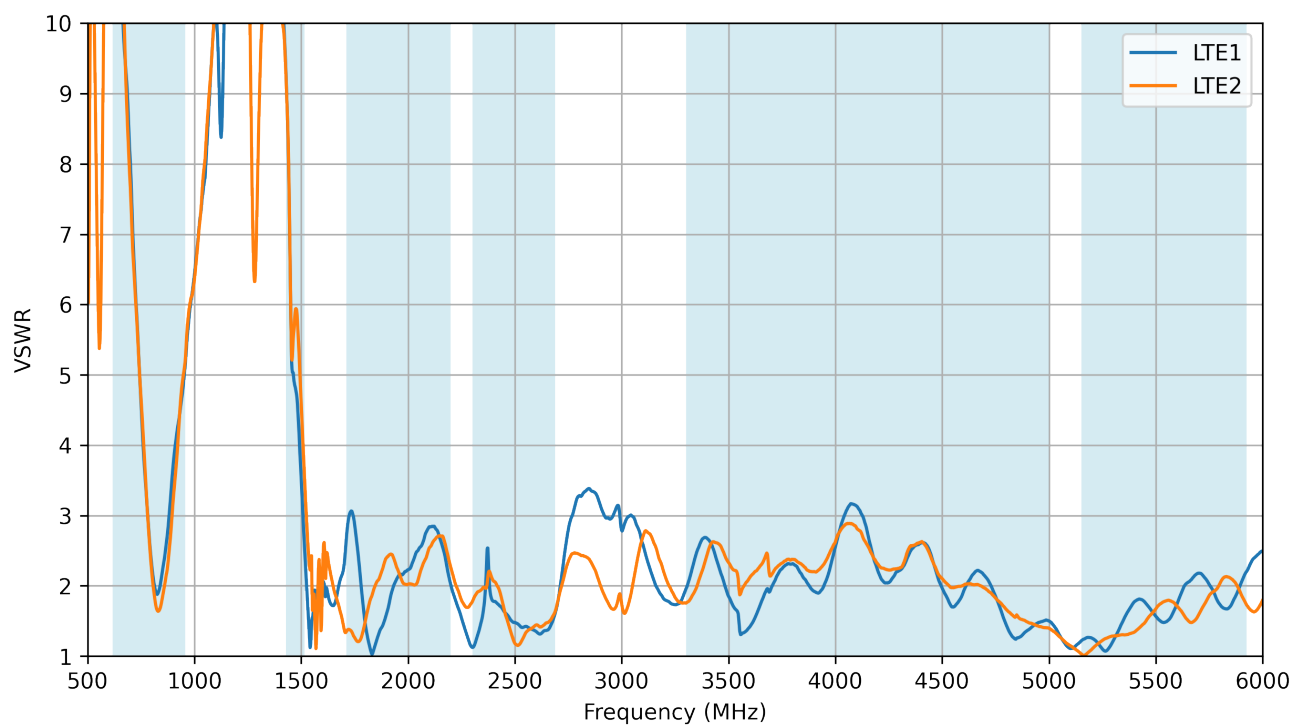


VNA Set-up on 30x30cm Ground Plane

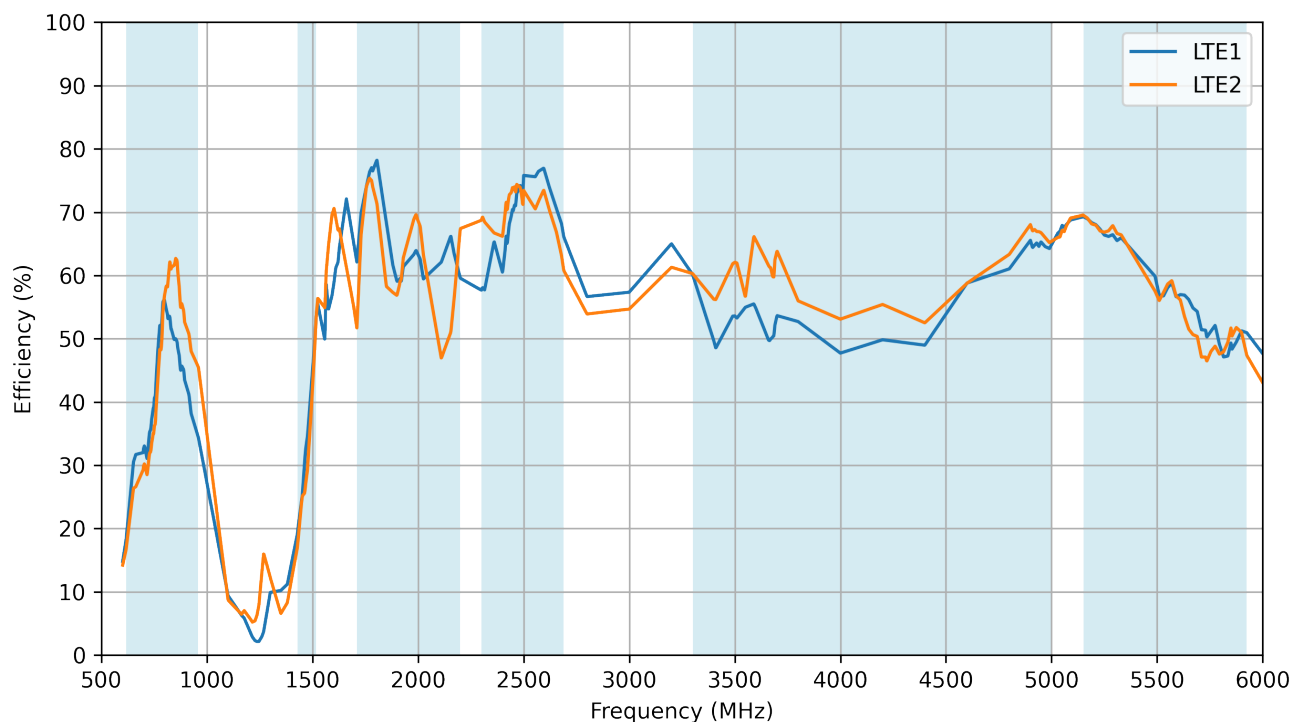
## 5.2 LTE - Return Loss



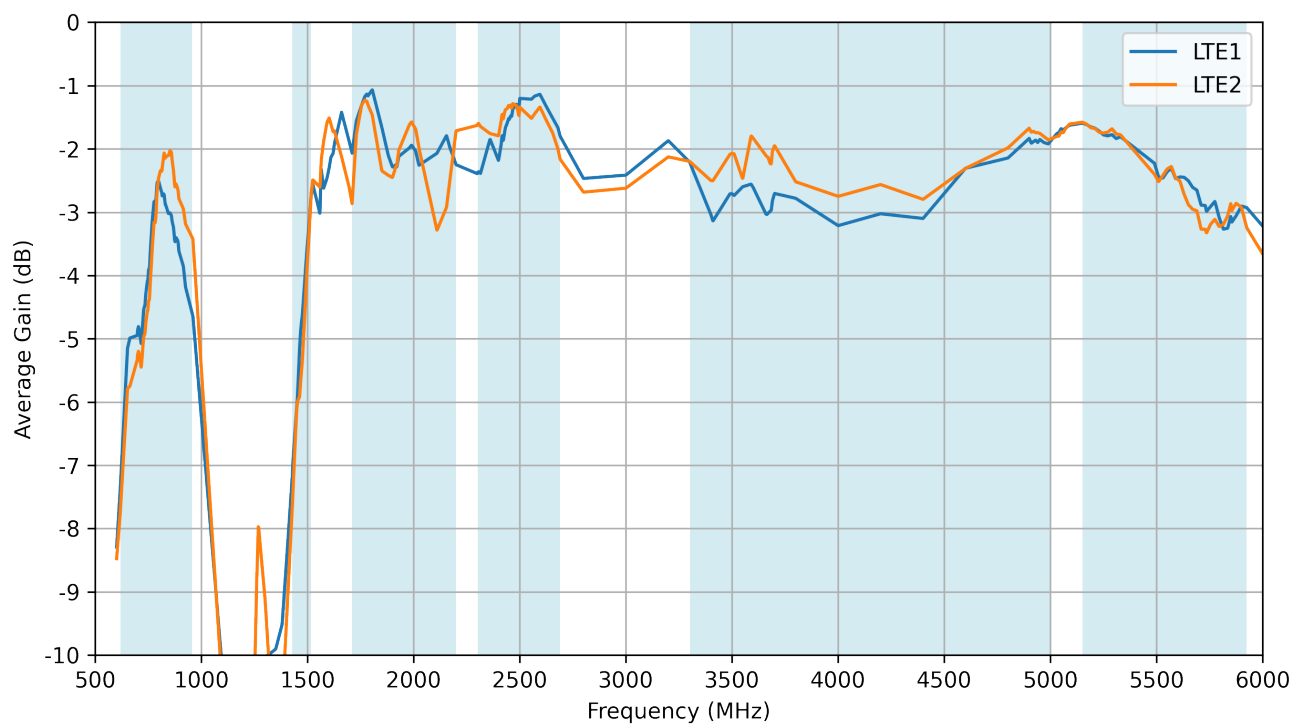
## 5.3 LTE - VSWR



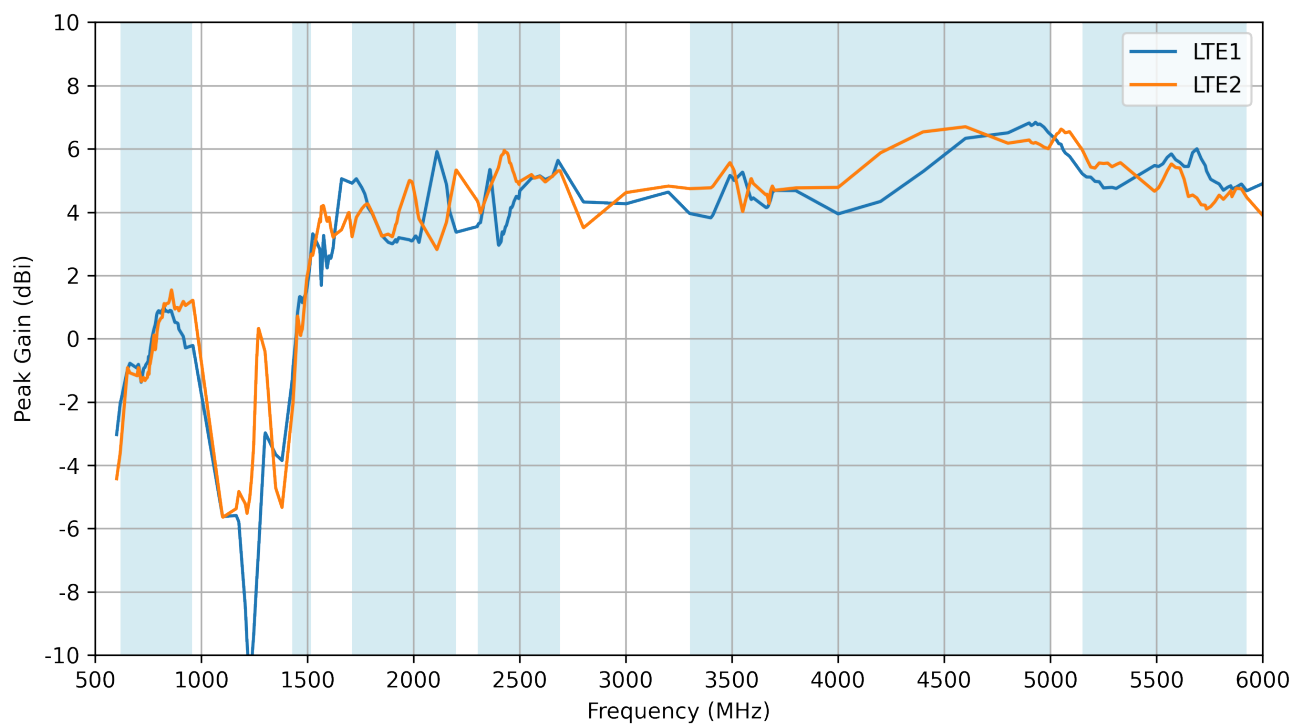
## 5.4 LTE - Efficiency



## 5.5 LTE - Average Gain

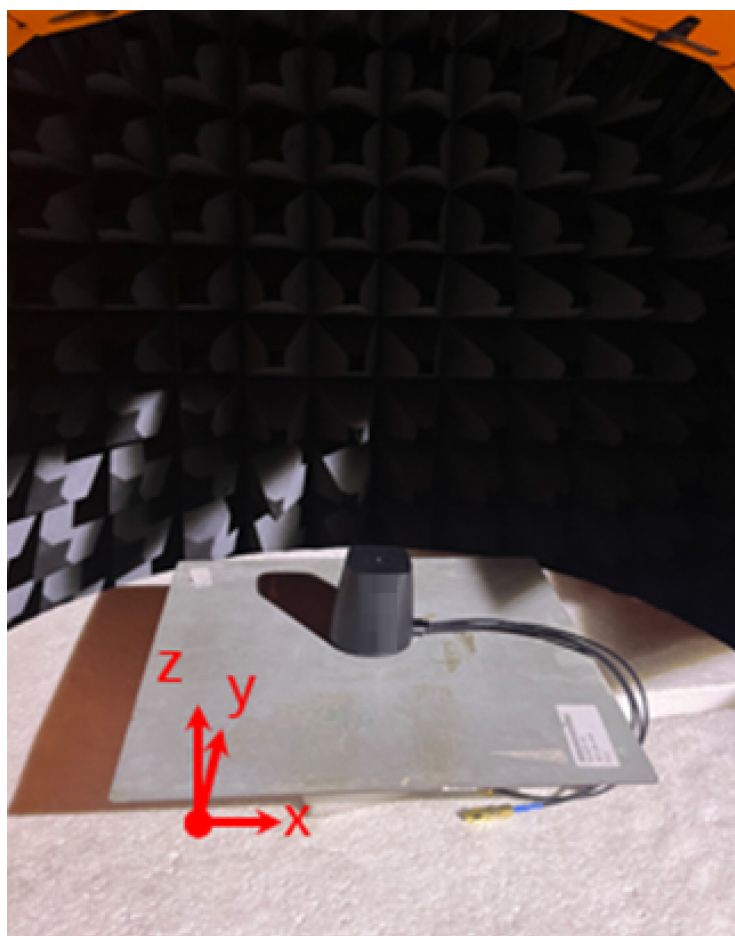
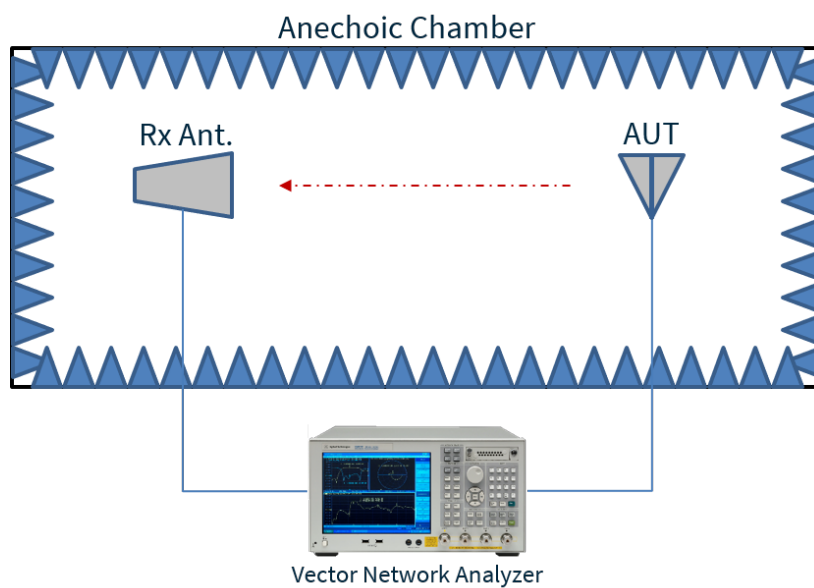


## 5.6 LTE - Peak Gain



## 6. Radiation Patterns

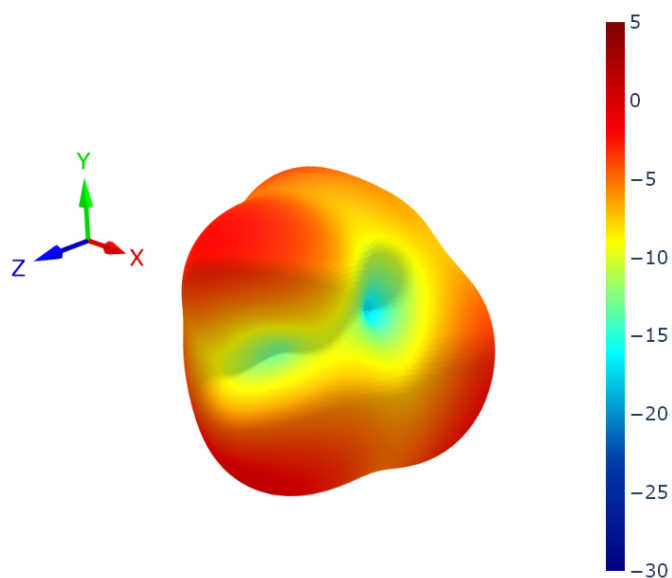
### 6.1 Test Setup



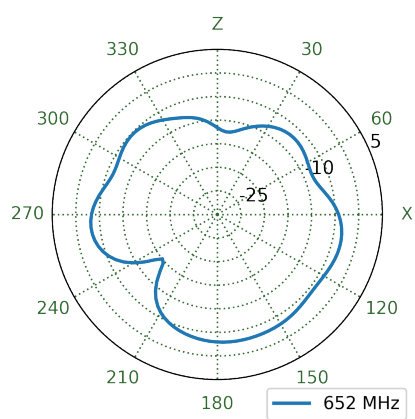
Chamber Set-up on 30x30cm Ground Plane



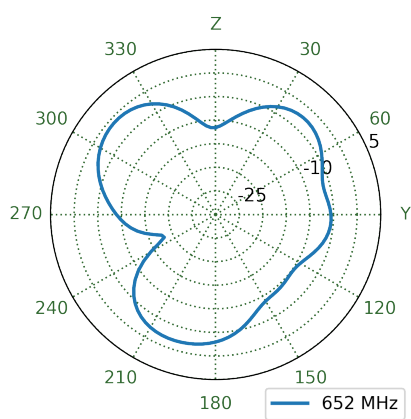
## 6.2 LTE1 Patterns at 650 MHz



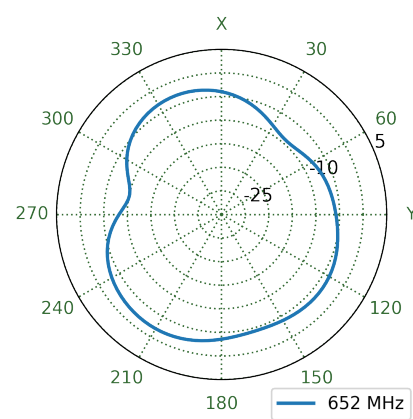
XZ Plane



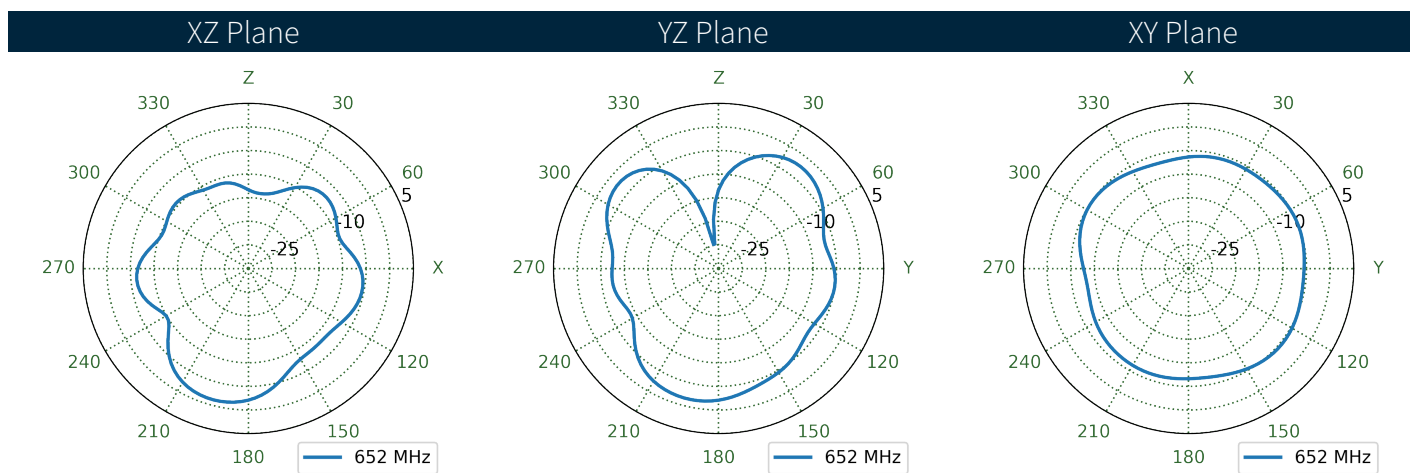
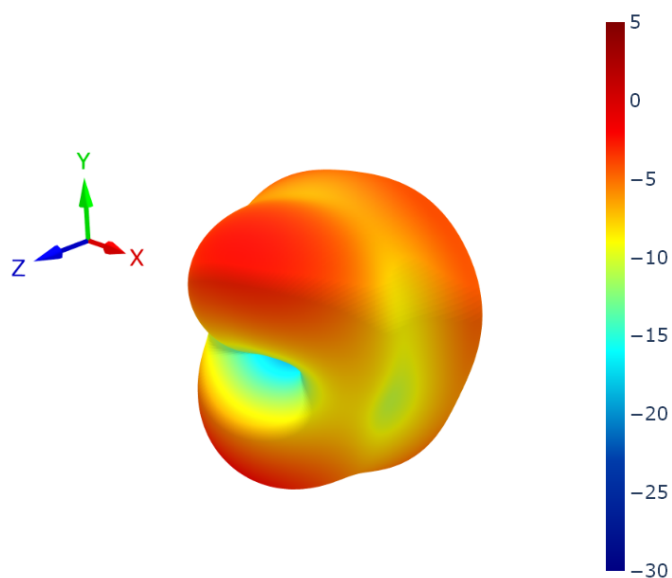
YZ Plane



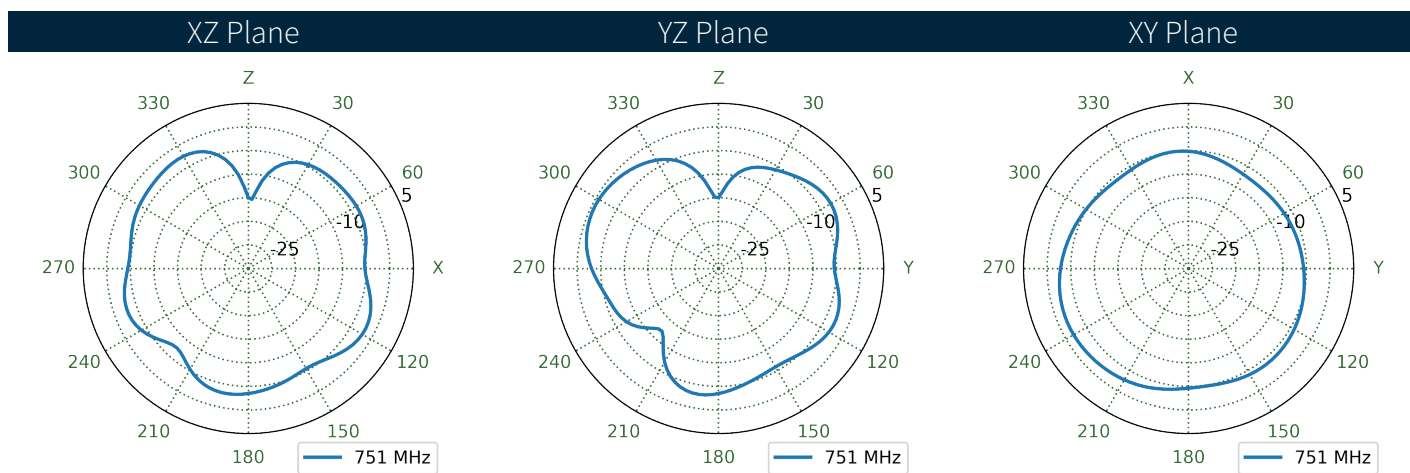
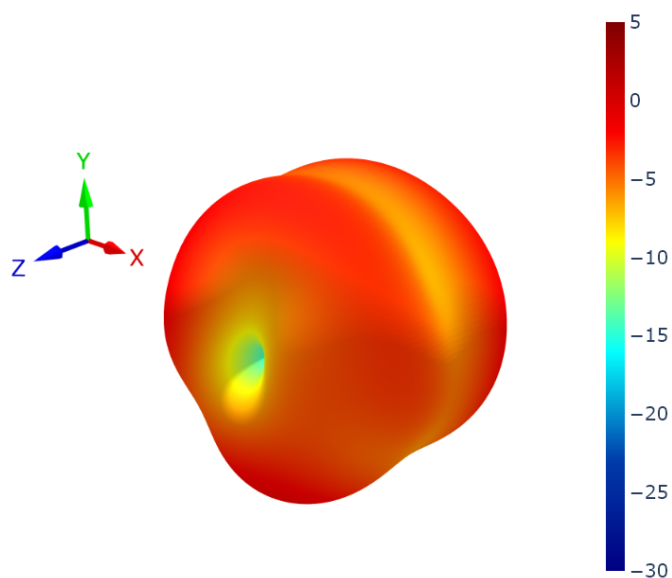
XY Plane



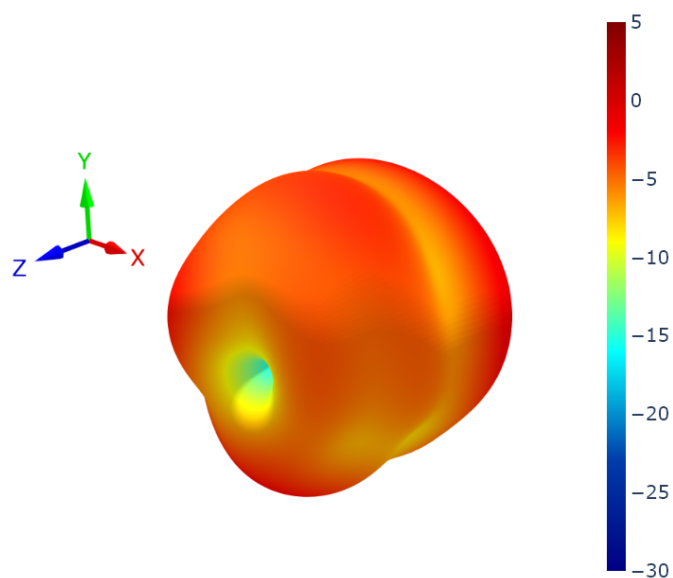
## 6.3 LTE2 Patterns at 650 MHz



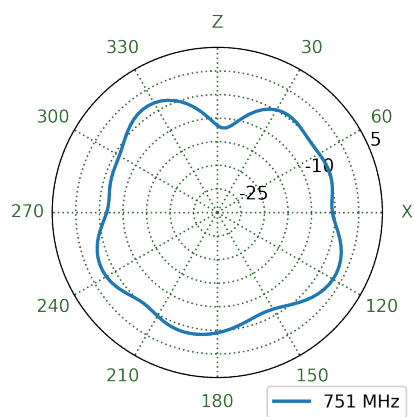
## 6.4 LTE1 Patterns at 750 MHz



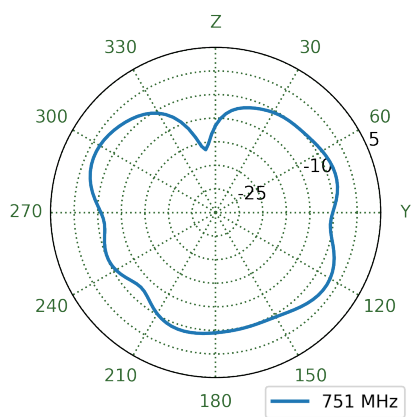
## 6.5 LTE2 Patterns at 750 MHz



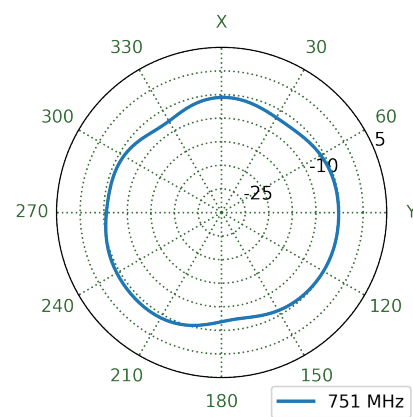
XZ Plane



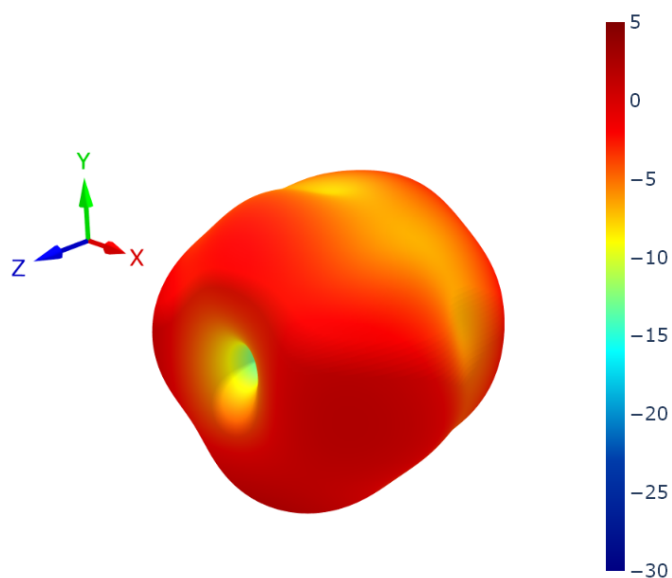
YZ Plane



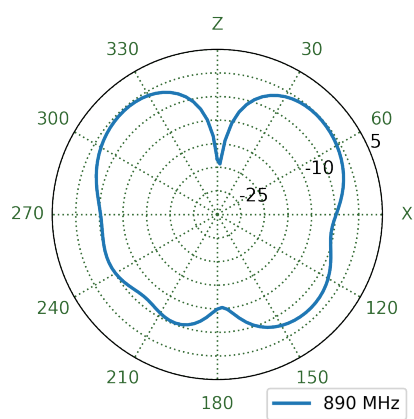
XY Plane



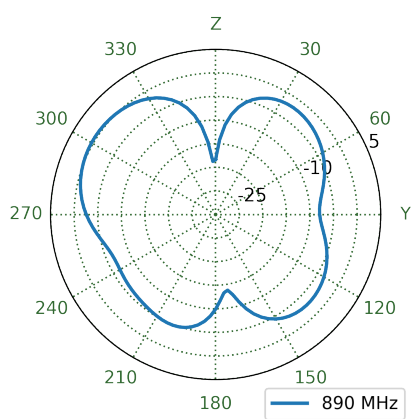
## 6.6 LTE1 Patterns at 890 MHz



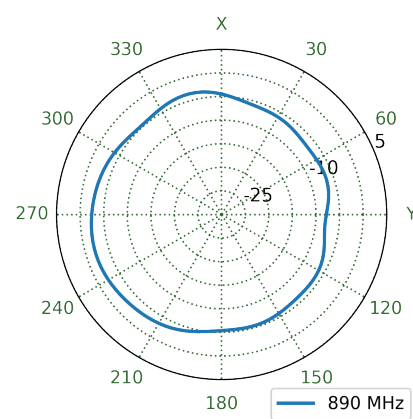
XZ Plane



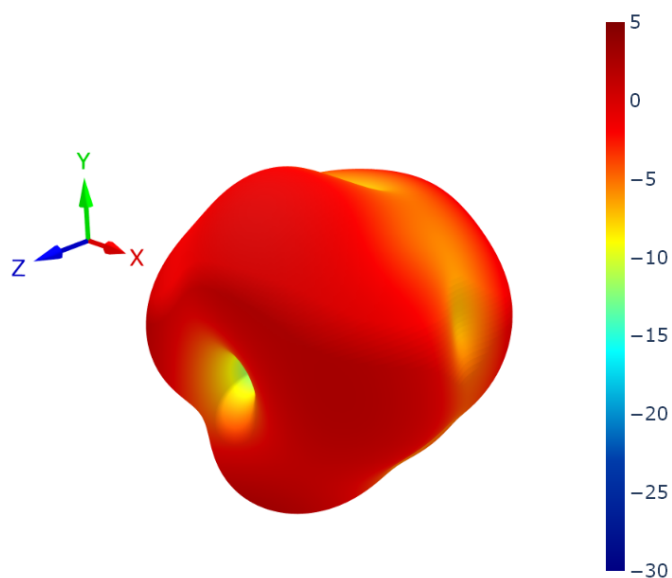
YZ Plane



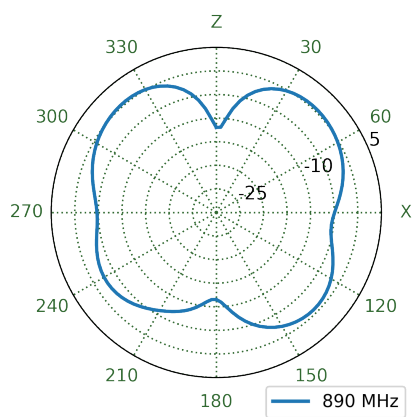
XY Plane



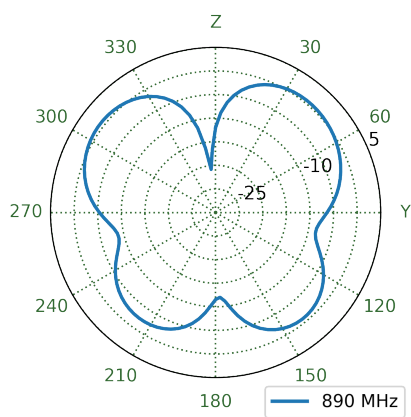
## 6.7 LTE2 Patterns at 890 MHz



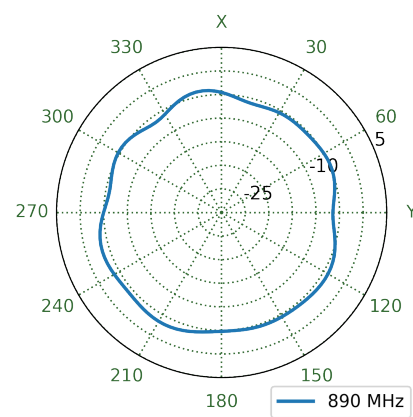
XZ Plane



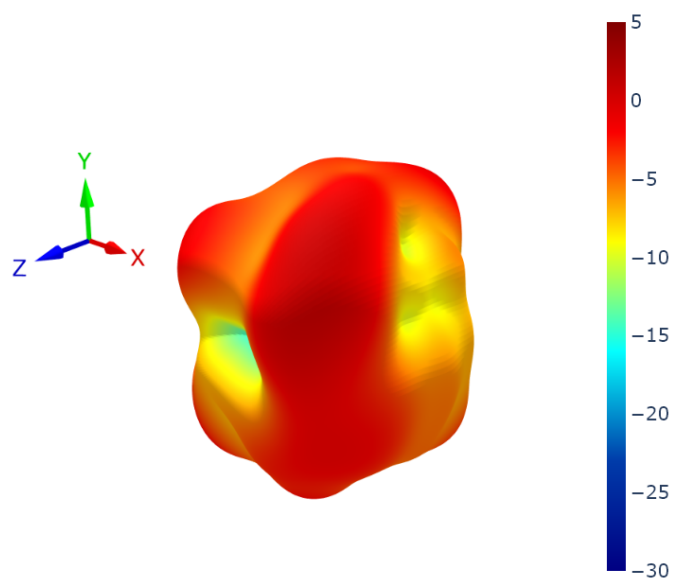
YZ Plane



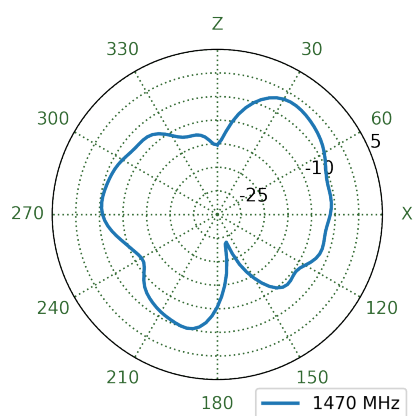
XY Plane



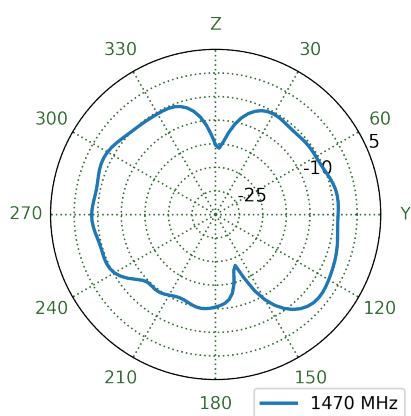
## 6.8 LTE1 Patterns at 1470 MHz



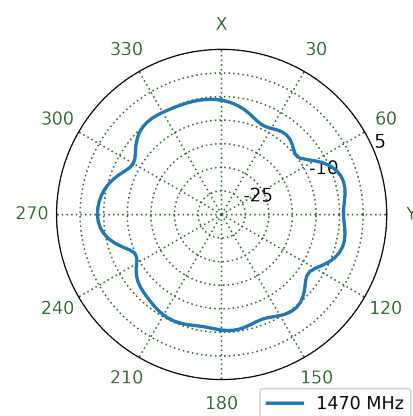
XZ Plane



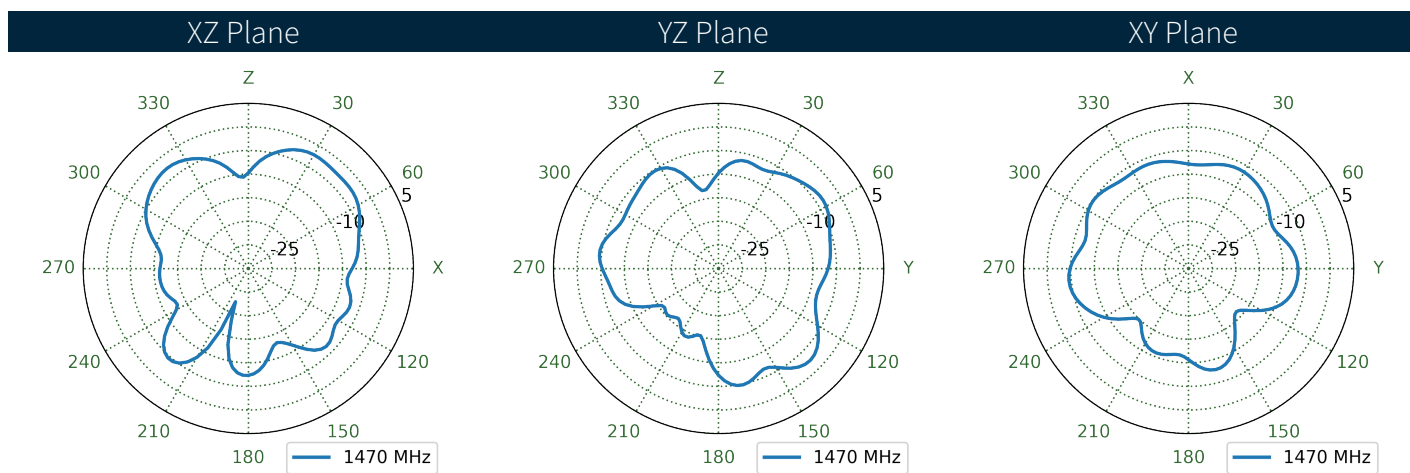
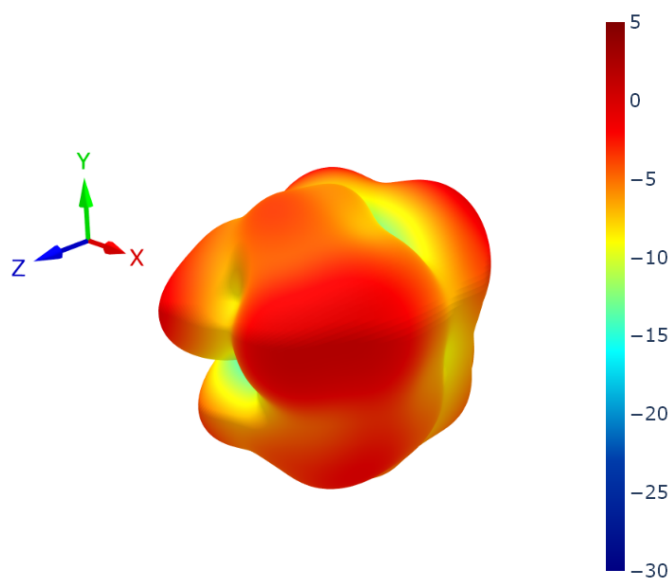
YZ Plane



XY Plane

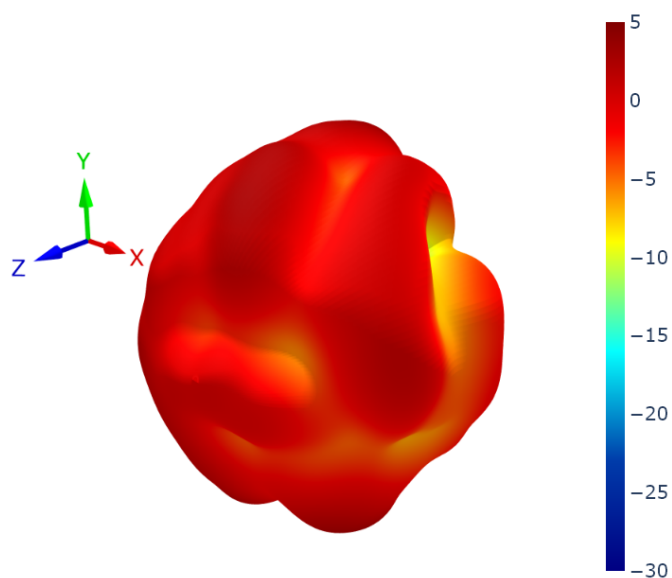


## 6.9 LTE2 Patterns at 1470 MHz

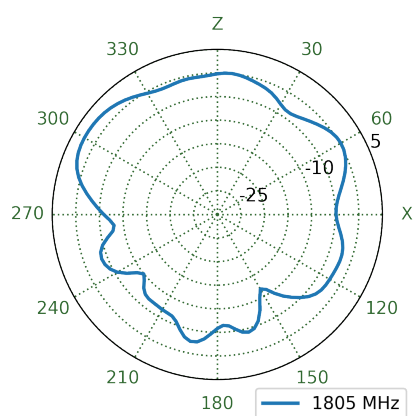




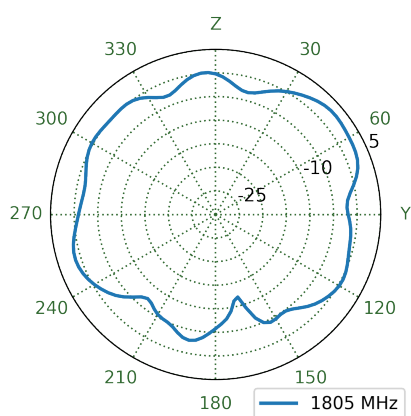
## 6.10 LTE1 Patterns at 1805 MHz



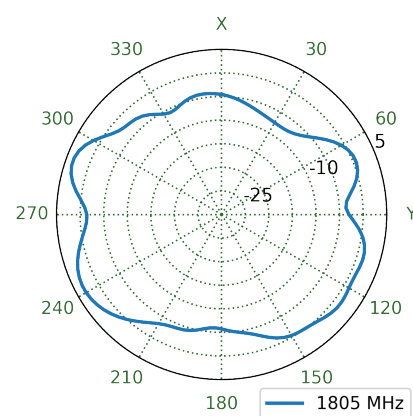
XZ Plane



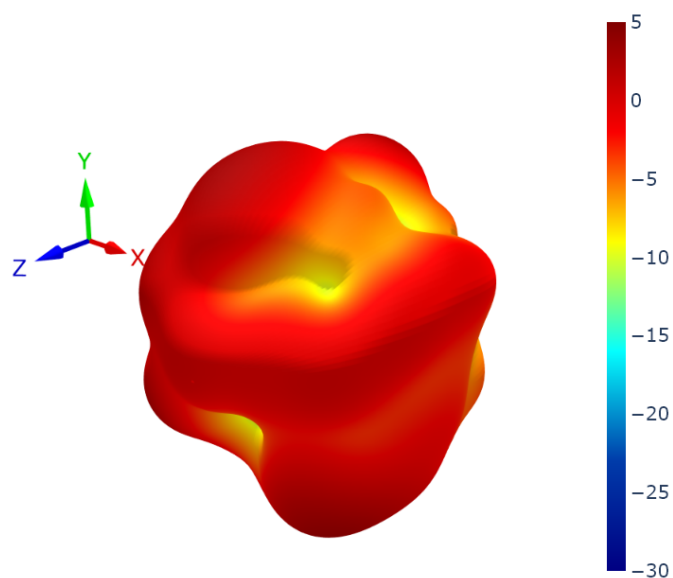
YZ Plane



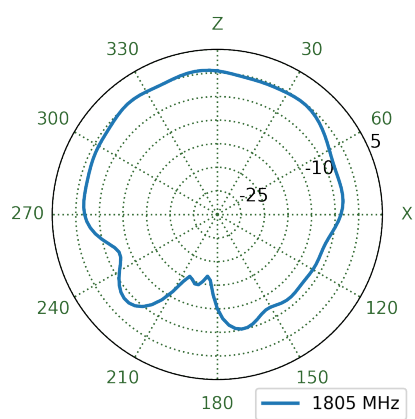
XY Plane



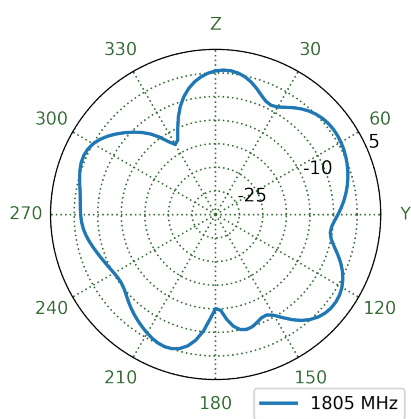
## 6.11 LTE2 Patterns at 1805 MHz



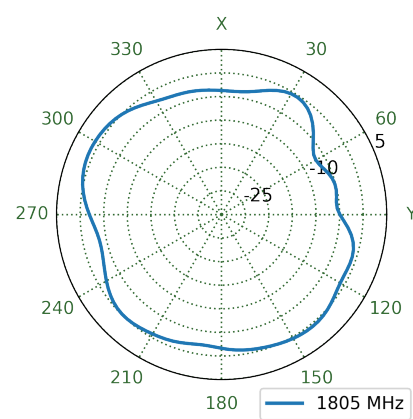
XZ Plane



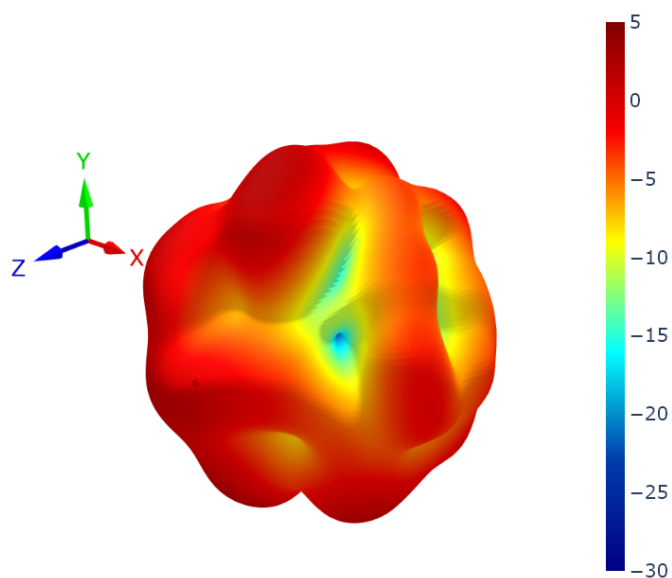
YZ Plane



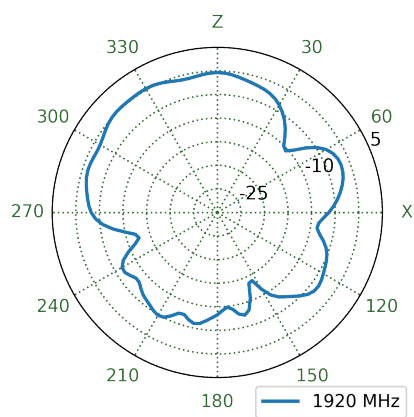
XY Plane



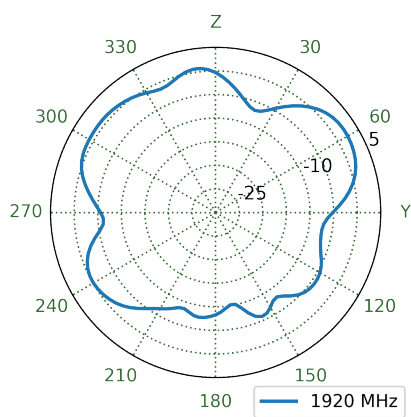
## 6.12 LTE1 Patterns at 1920 MHz



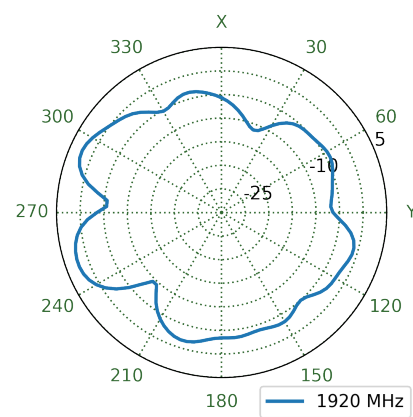
XZ Plane



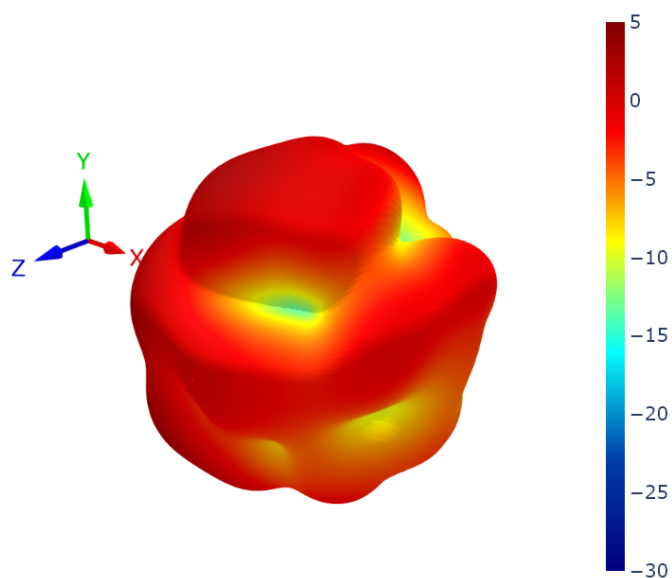
YZ Plane



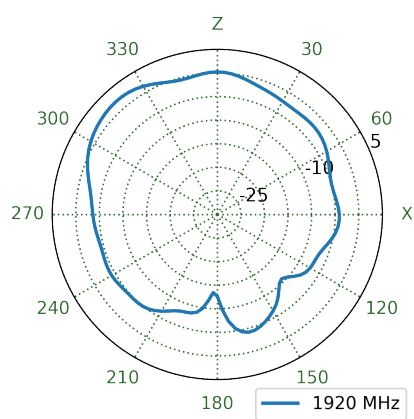
XY Plane



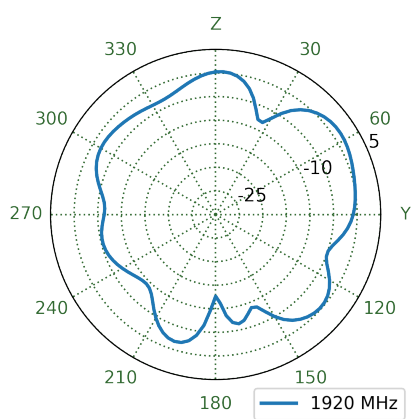
## 6.13 LTE2 Patterns at 1920 MHz



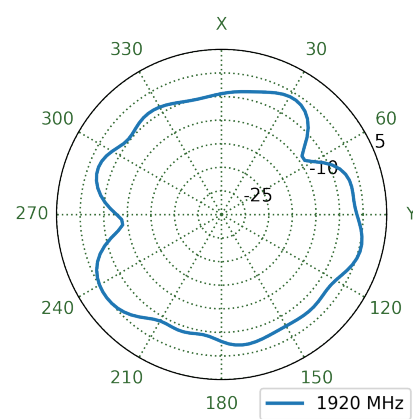
XZ Plane



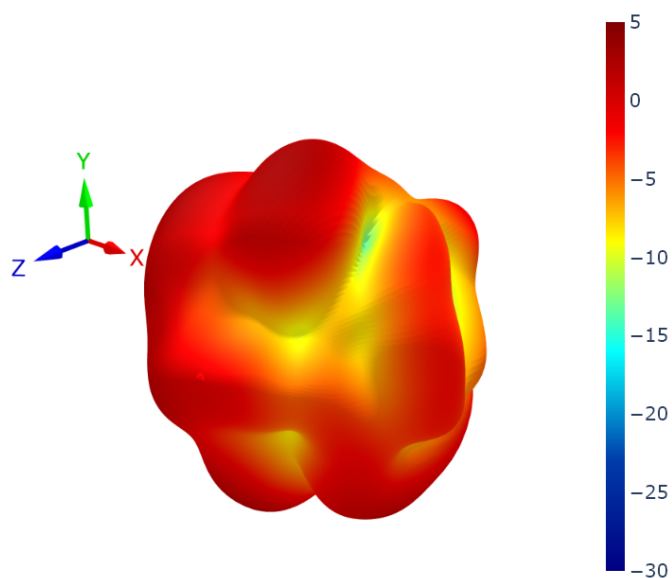
YZ Plane



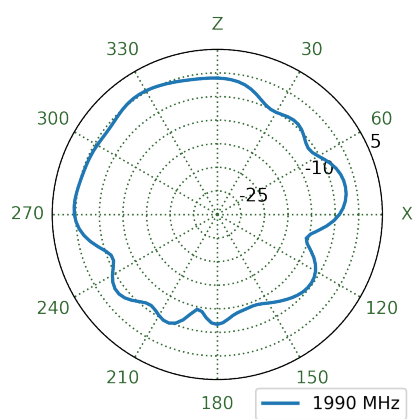
XY Plane



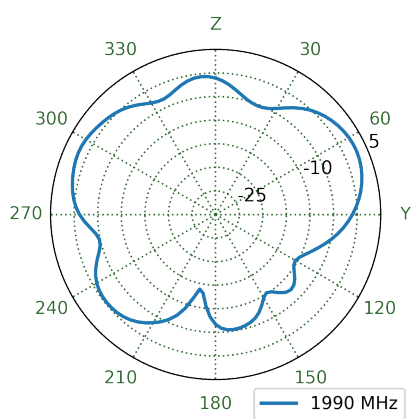
## 6.14 LTE1 Patterns at 1990 MHz



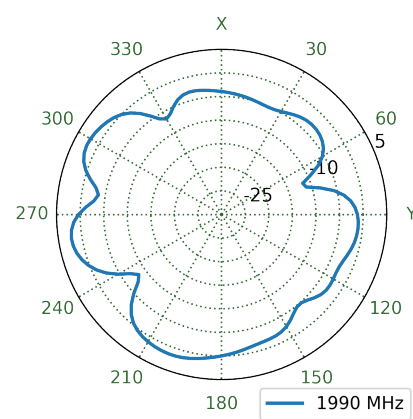
XZ Plane



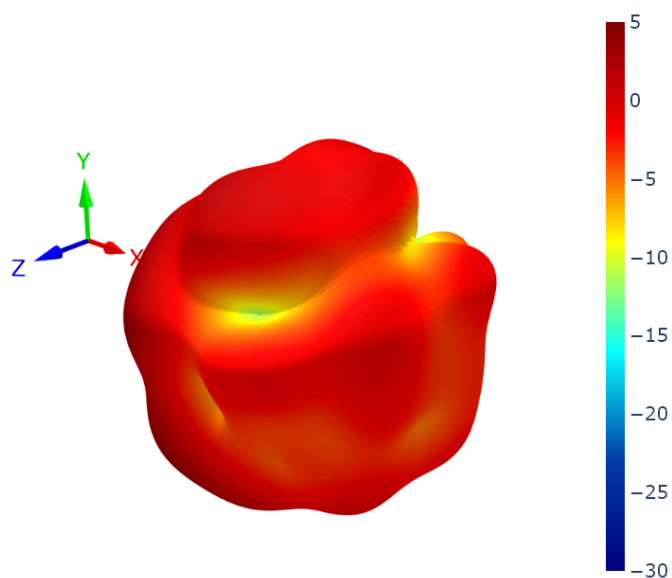
YZ Plane



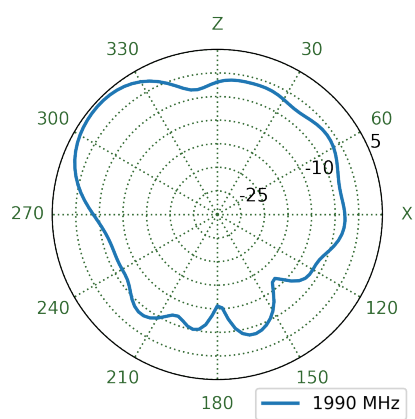
XY Plane



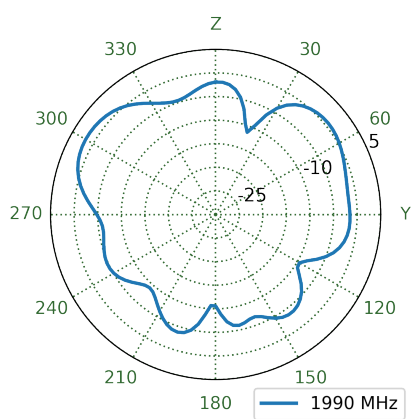
## 6.15 LTE2 Patterns at 1990 MHz



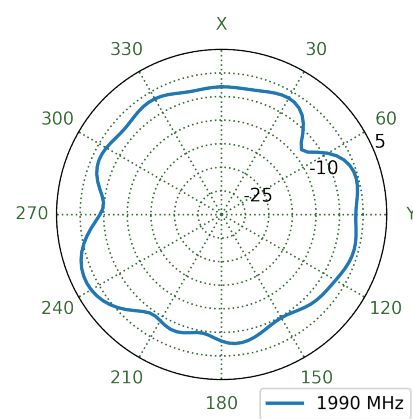
XZ Plane



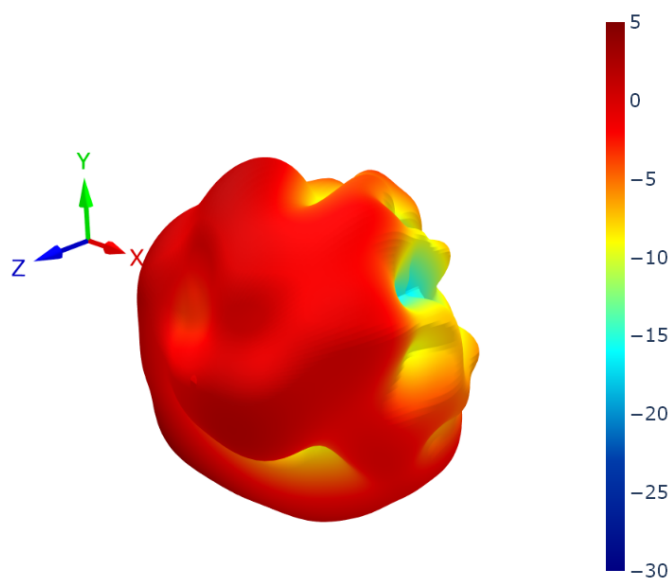
YZ Plane



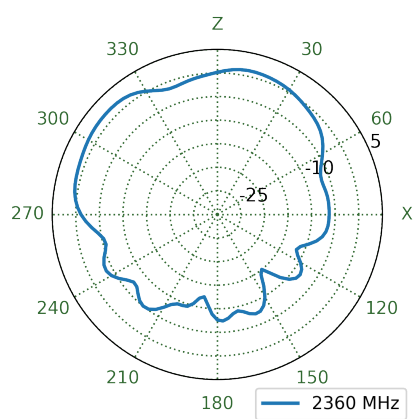
XY Plane



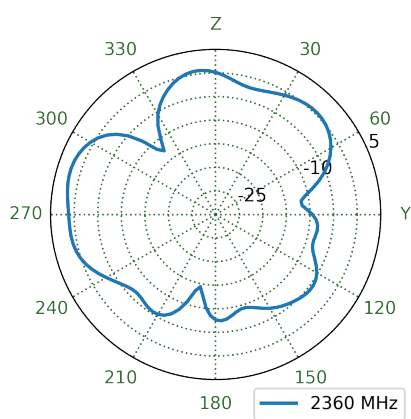
## 6.16 LTE1 Patterns at 2360 MHz



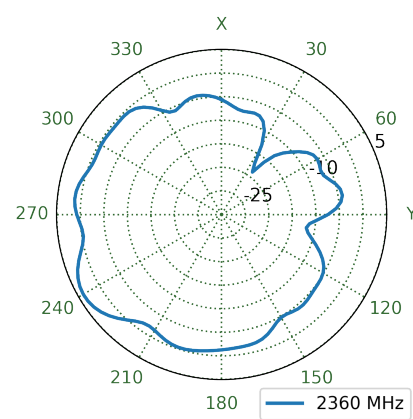
XZ Plane



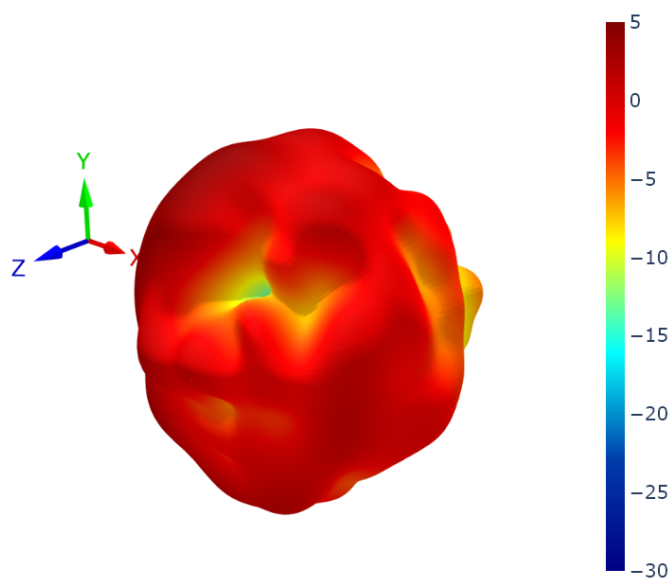
YZ Plane



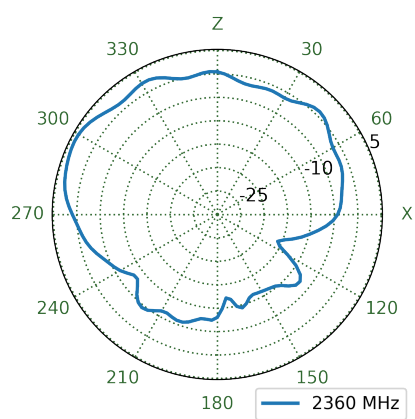
XY Plane



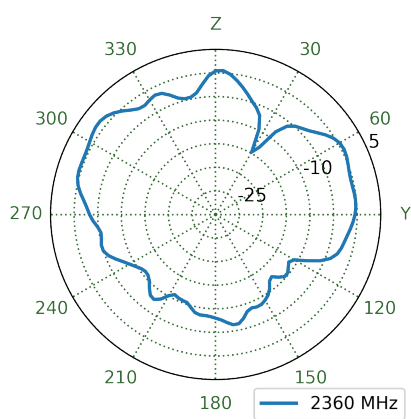
## 6.17 LTE2 Patterns at 2360 MHz



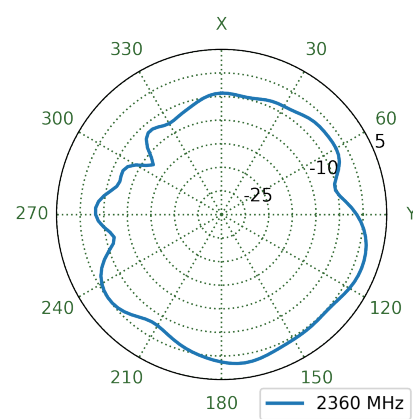
XZ Plane



YZ Plane

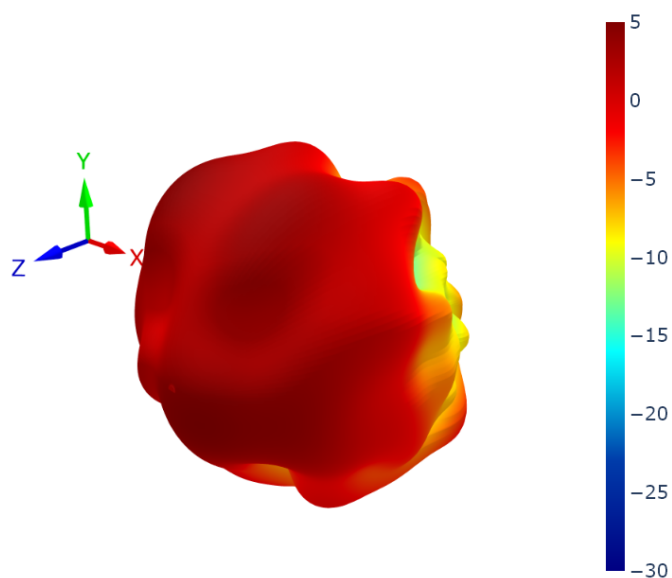


XY Plane

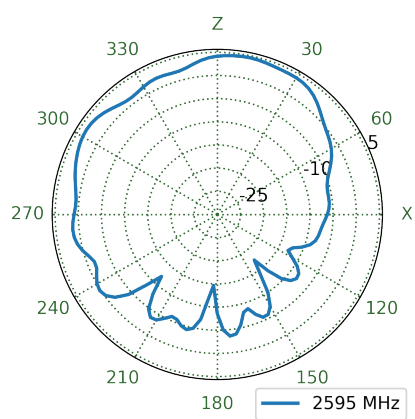




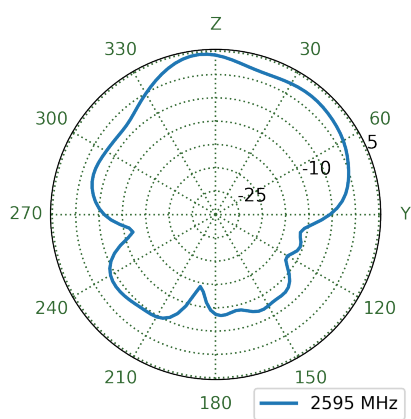
## 6.18 LTE1 Patterns at 2595 MHz



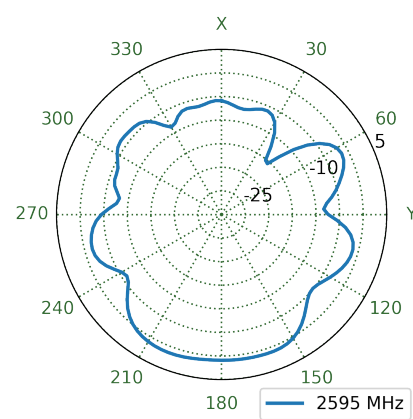
XZ Plane



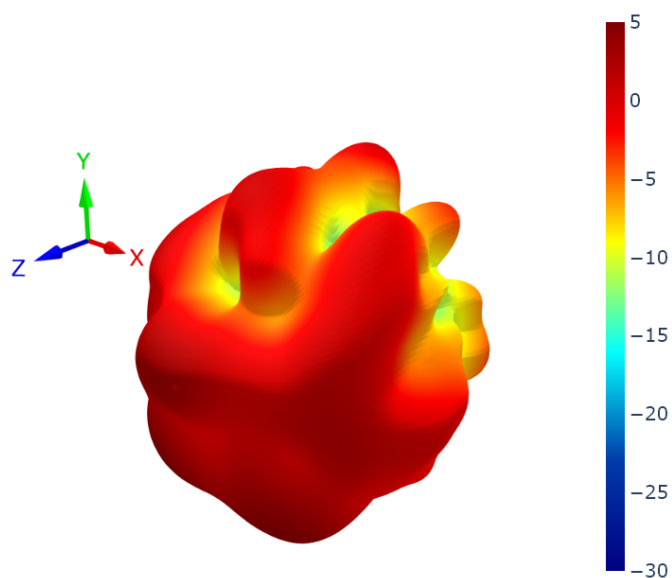
YZ Plane



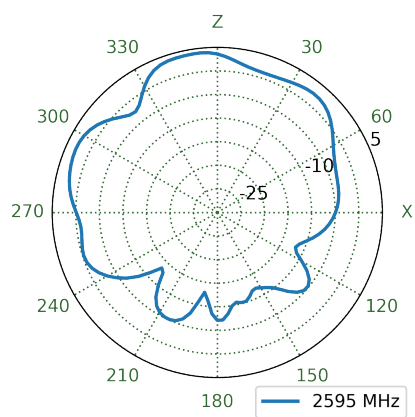
XY Plane



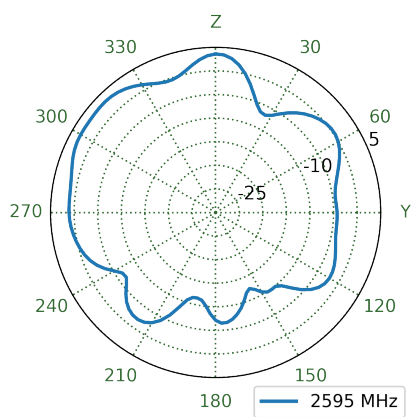
## 6.19 LTE2 Patterns at 2595 MHz



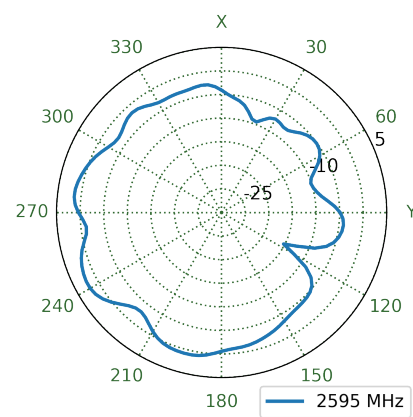
XZ Plane



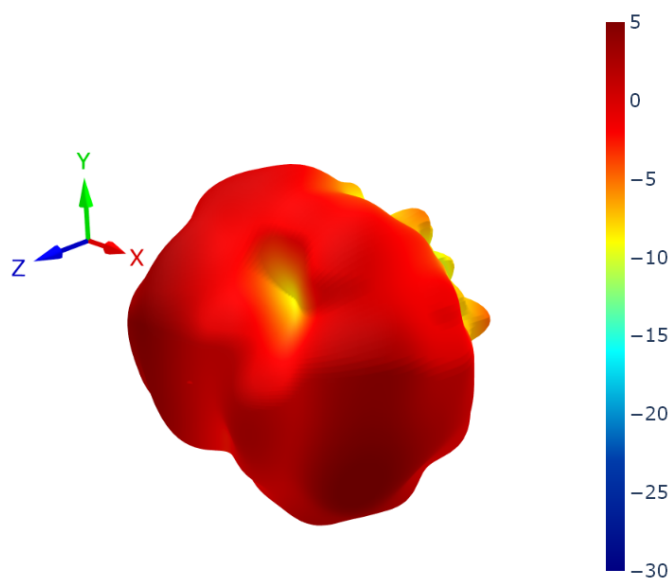
YZ Plane



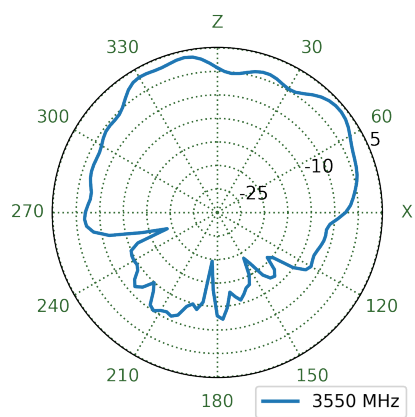
XY Plane



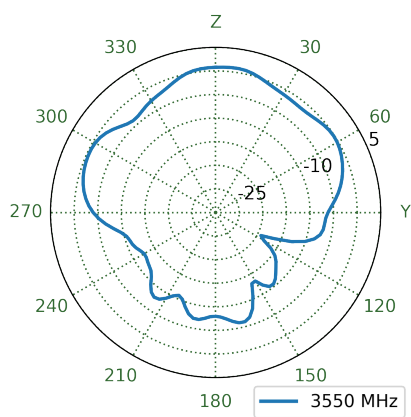
## 6.20 LTE1 Patterns at 3550 MHz



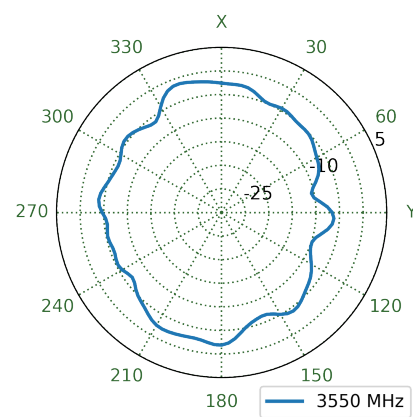
XZ Plane



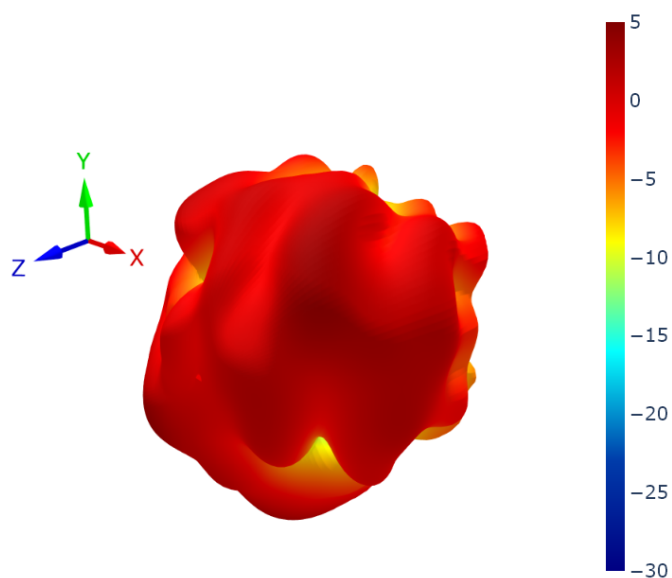
YZ Plane



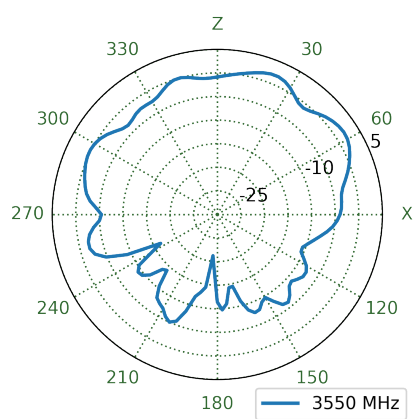
XY Plane



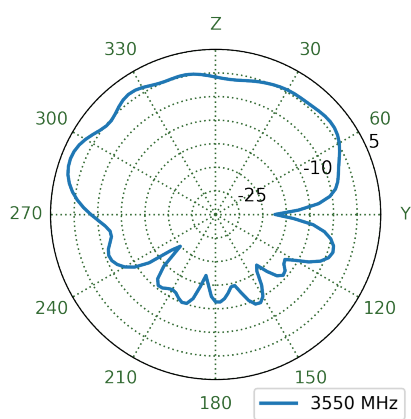
## 6.21 LTE2 Patterns at 3550 MHz



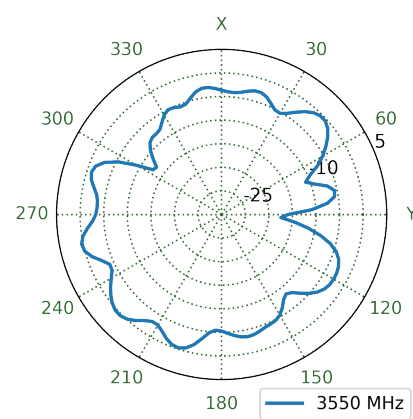
XZ Plane



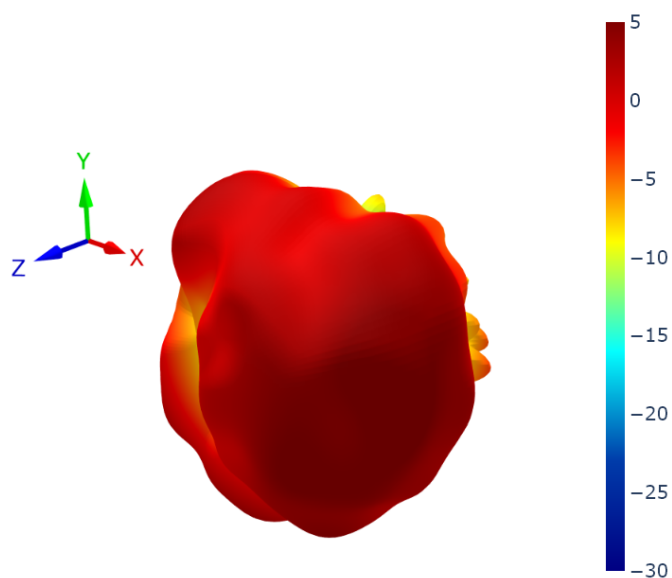
YZ Plane



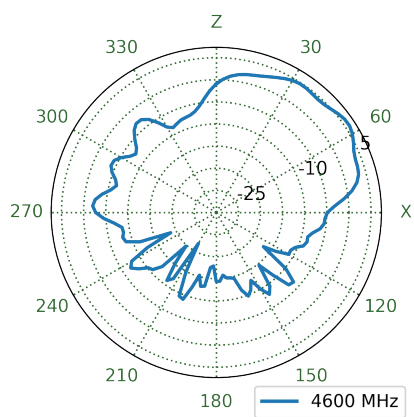
XY Plane



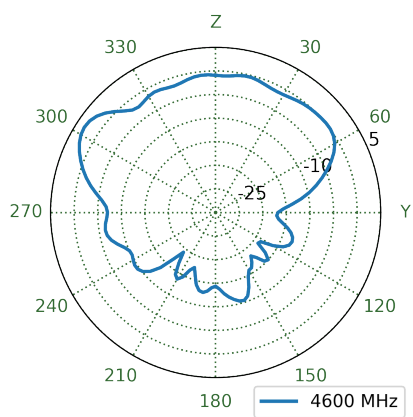
## 6.22 LTE1 Patterns at 4600 MHz



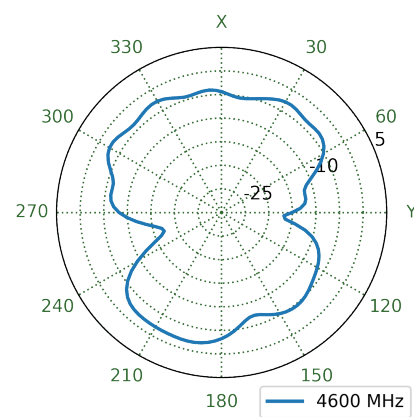
XZ Plane



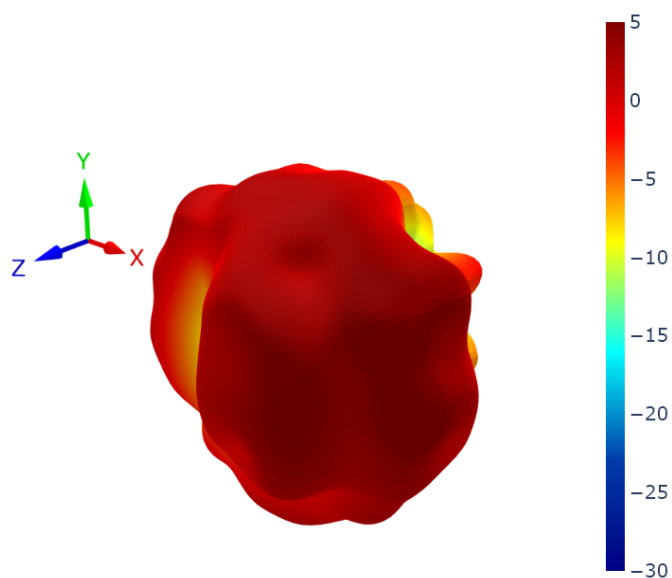
YZ Plane



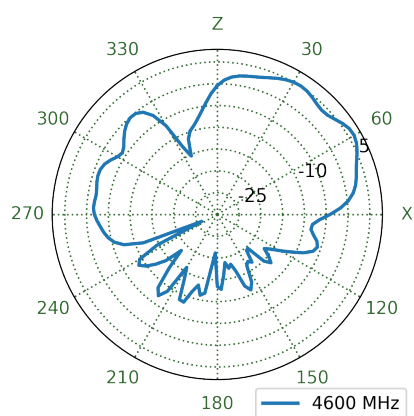
XY Plane



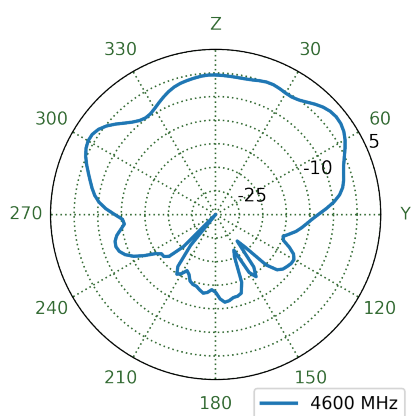
## 6.23 LTE2 Patterns at 4600 MHz



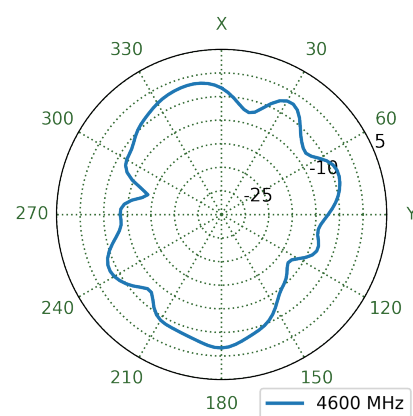
XZ Plane



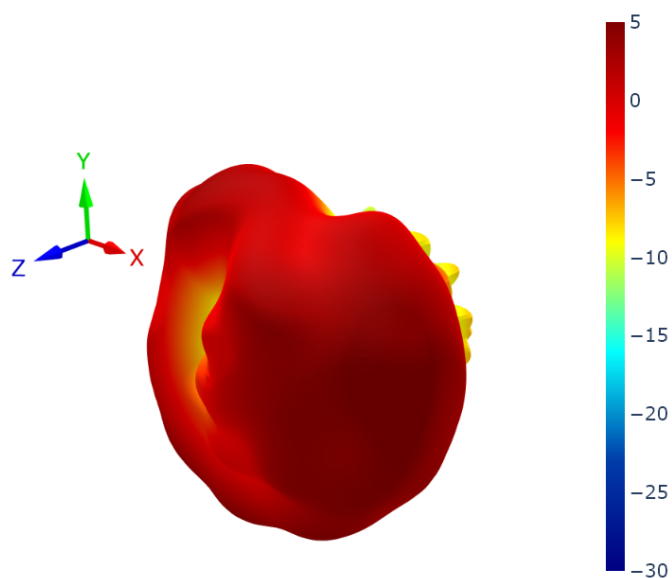
YZ Plane



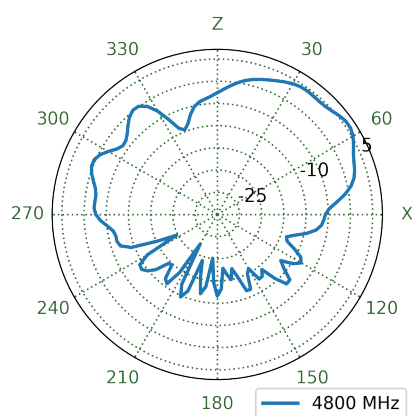
XY Plane



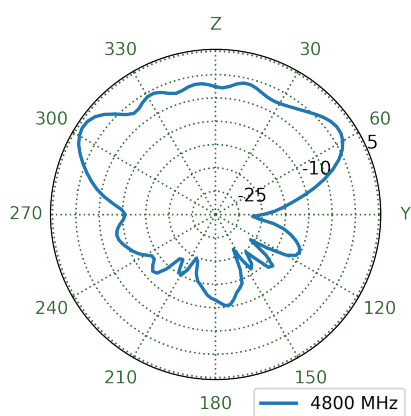
## 6.24 LTE1 Patterns at 4800 MHz



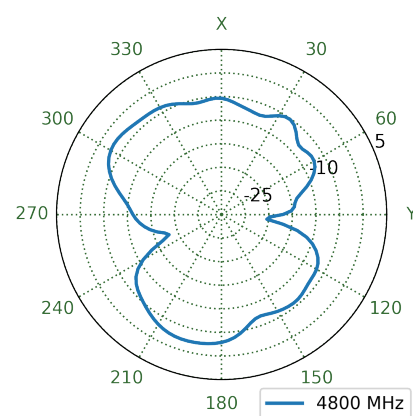
XZ Plane



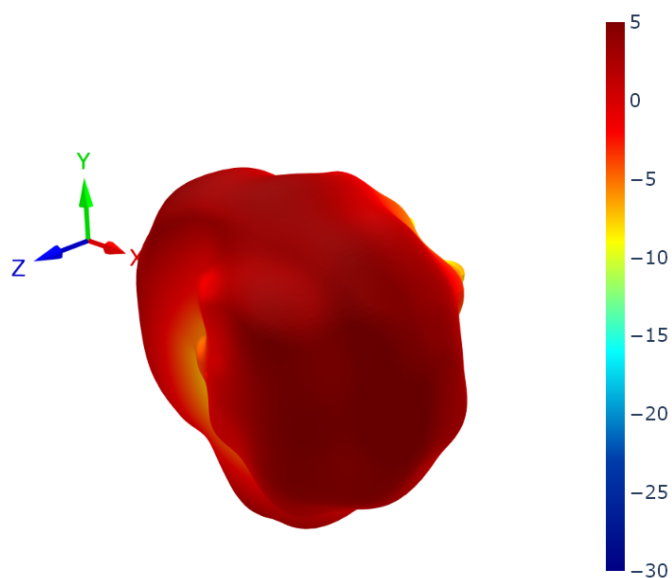
YZ Plane



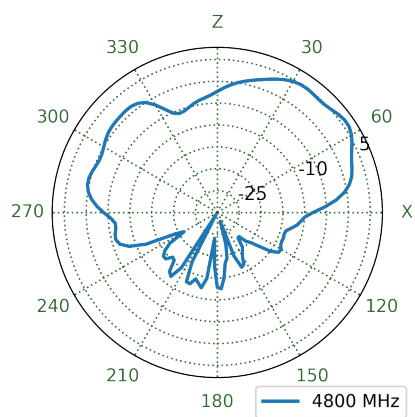
XY Plane



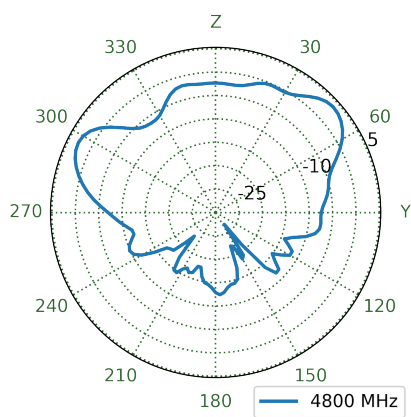
## 6.25 LTE2 Patterns at 4800 MHz



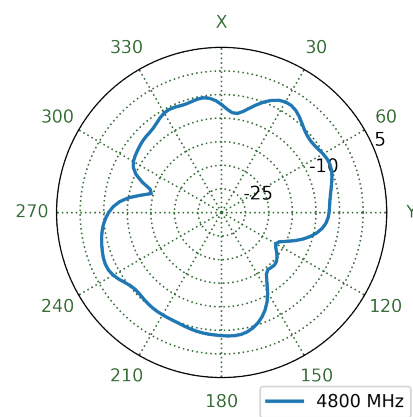
XZ Plane



YZ Plane

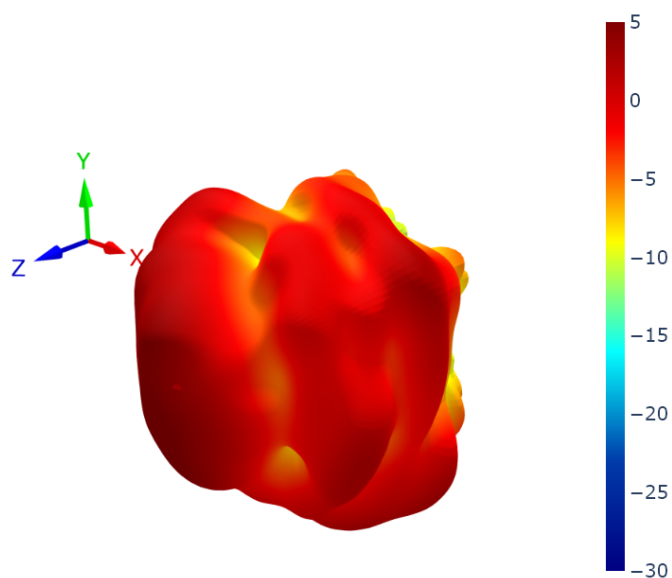


XY Plane

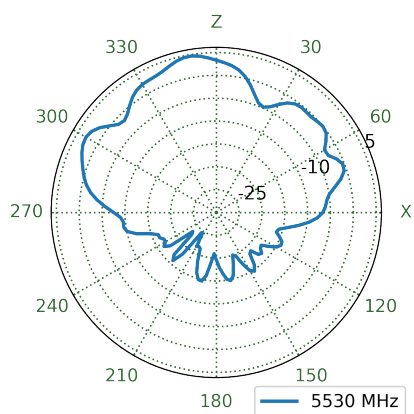




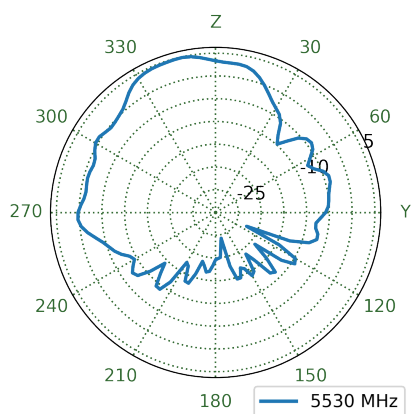
## 6.26 LTE1 Patterns at 5530 MHz



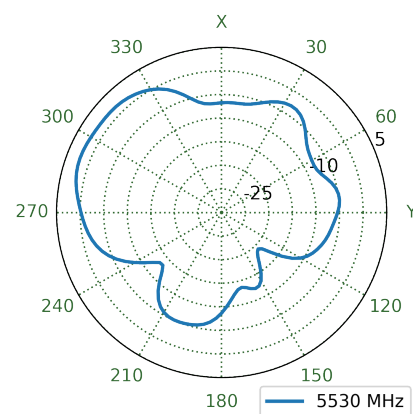
XZ Plane



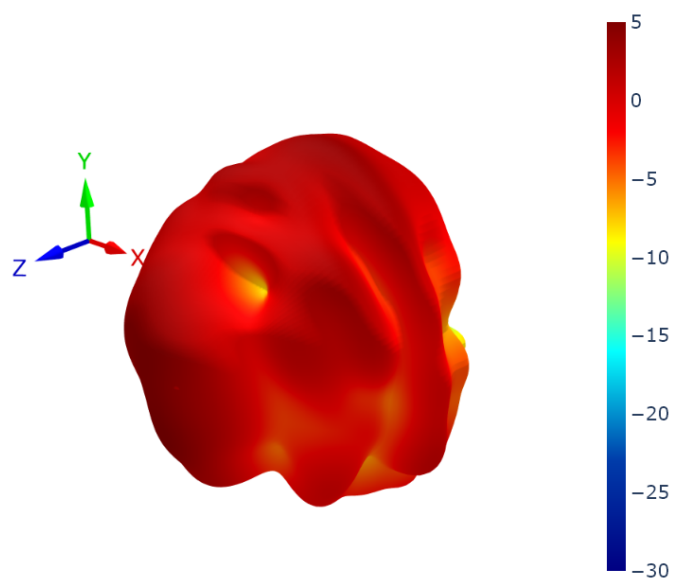
YZ Plane



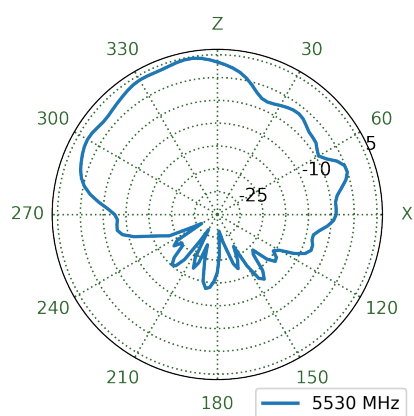
XY Plane



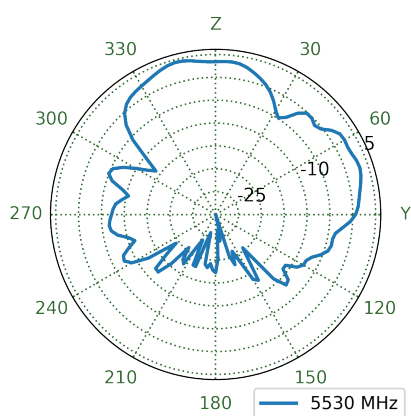
## 6.27 LTE2 Patterns at 5530 MHz



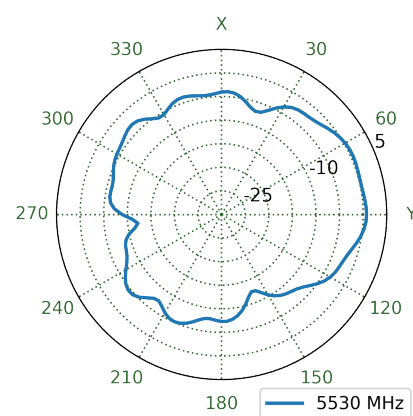
XZ Plane



YZ Plane



XY Plane



Changelog for the datasheet

SPE-24-8-213 – MA342.A.BI.001

Revision: A (Original First Release)

|         |                 |
|---------|-----------------|
| Date:   | 2024-09-04      |
| Notes:  | Initial Release |
| Author: | Gary West       |

Previous Revisions

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



[www.taoglas.com](http://www.taoglas.com)

